

Effectiveness Monitoring and Citizen Involvement

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**PA Department of Environmental Protection
Citizens' Volunteer Monitoring Program**









Volunteer Monitoring in Pennsylvania

**Watershed
Associations**

**Senior Environment
Corps**

Lake Associations

School Groups



Citizens' Volunteer Monitoring Program (CVMP)

Goals

**Help citizens know
their water resources
better**

**Show that volunteers
collect quality data**

**Act as a liaison
between volunteers,
service providers and
DEP**



Monitoring Purposes

Education and Awareness

Baseline Data Collection

Restoration Effectiveness

State and Federal Agency Use

Restoration Projects

**Natural Stream Channel Design
(NSCD) Monitoring**

**Conservation Reserve
Enhancement Program
(CREP) Monitoring**



Natural Stream Channel Design (NSCD) Projects

Monitoring effectiveness of NSCD projects

Issues - erosion, unstable streambanks, sedimentation,
impaired habitat

319 projects:

1. McLaughlin Run-
Allegheny County

2. Codorus Creek-
York County



Biological/Habitat Assessment

**Macroinvertebrates
(order and family) –
Pa SEC volunteer
protocol**

**Habitat (EPA's RBP) –
fish cover,
embeddedness,
sediment deposition,
bank stability,
riparian zone width**



Physical Characteristics



**Pebble count at
sampling
locations**

**Add cross sections
to monitoring
protocols**

McLaughlin Run Project

**Upper St Clair Citizens for Land
Stewardship, DEP, Skelly and Loy**

**Volunteer Water Quality and Stream
Bank/Channel Stability Program, 2001
(macroinvertebrates/x-sections/water
chemistry)**

**Pre and post project implementation
monitoring**

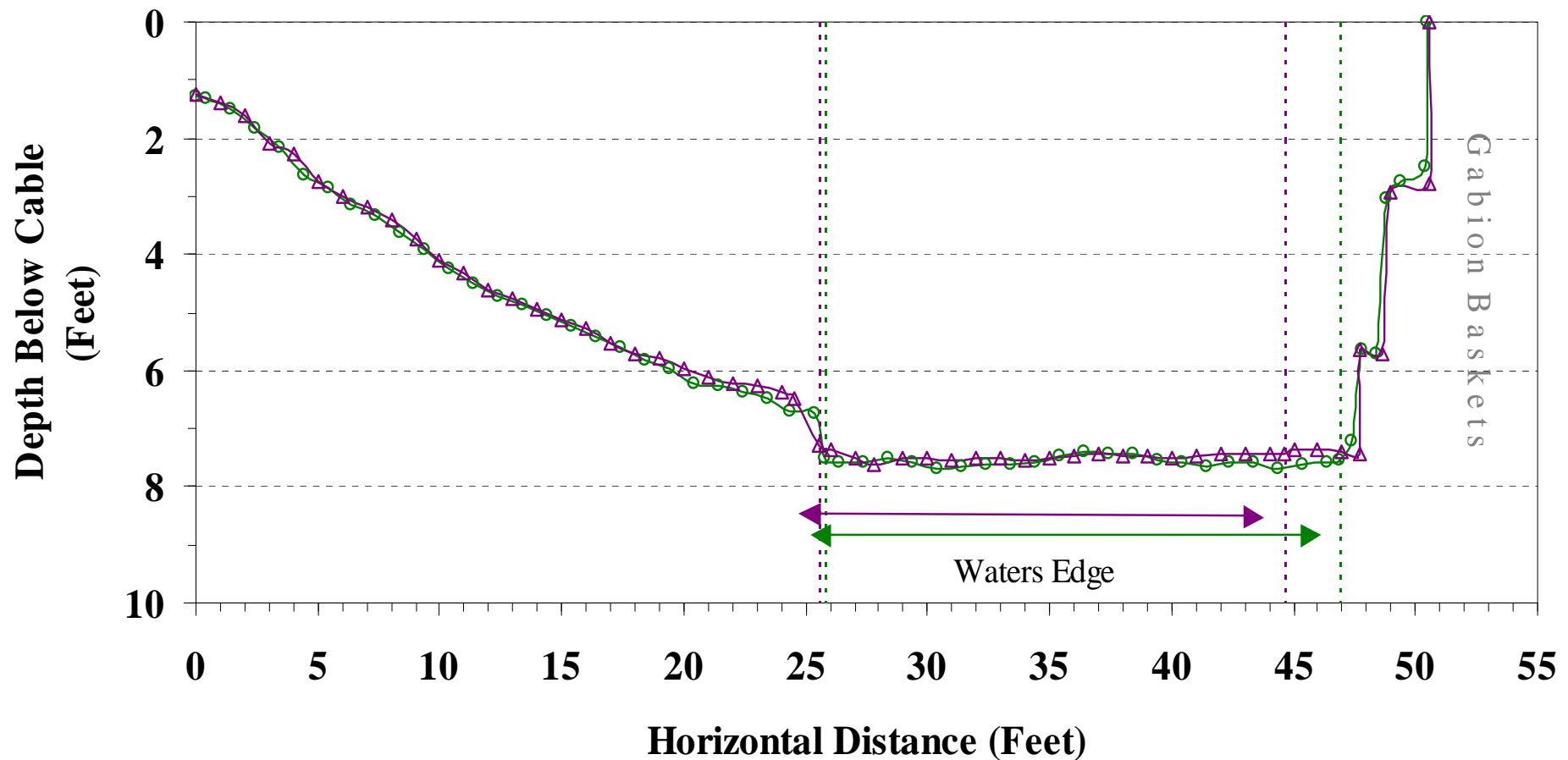




USC Citizens for Land Stewardship & Township of USC
McLaughlin Run Phase II NSCD Project
Upstream X-Section (Behind Recreation Building)

—○— 7/16/2001

—△— 10/13/2002











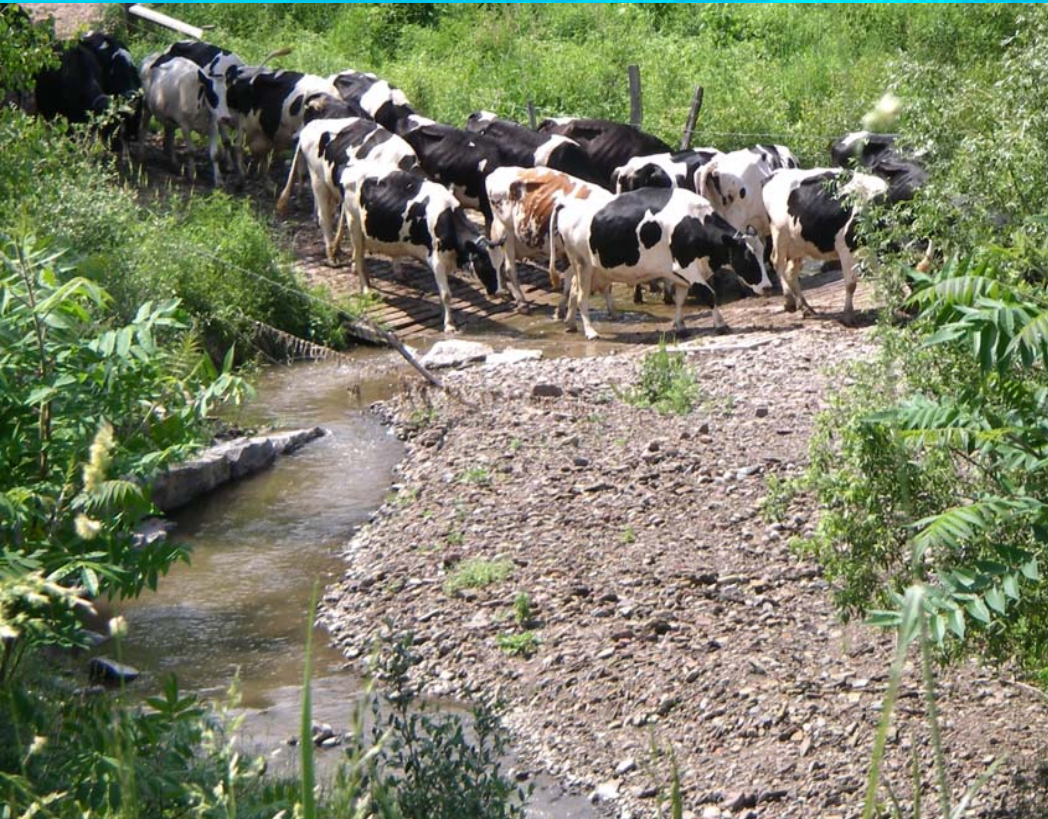
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Conservation Reserve Enhancement Program (CREP) Monitoring

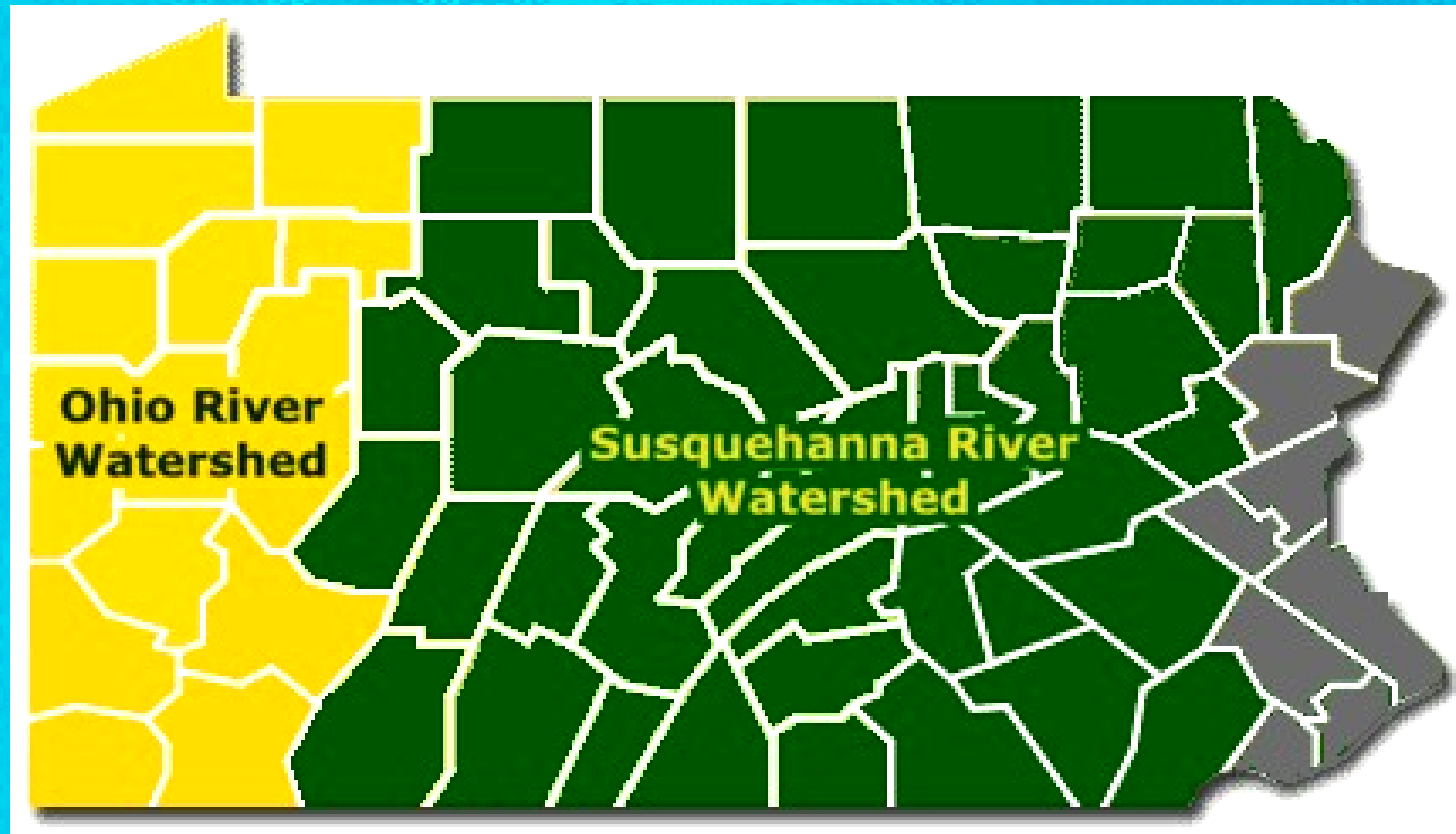


Federal funding

**Monitoring
effectiveness of
conservation
practices –
riparian buffers,
streambank
fencing, crossings**

Study Design

CREP Program Coverage



Ohio River Basin – 572 CREP projects

**Susquehanna & Potomac River Basins – 4,571
CREP projects**

CREP Monitoring

- 1. Centre County – Walizer Farm**
- 2. Clearfield County – Prislack, Smeal and Rainey Farms**
- 3. Bradford County - Mill Creek Study**
- 4. Adams County – King Farm**
- 5. York County – McClelland Farm**
- 6. Western PA Conservancy –
Westmoreland & Crawford Counties**

CREP Monitoring

Bracket site proposed for practice

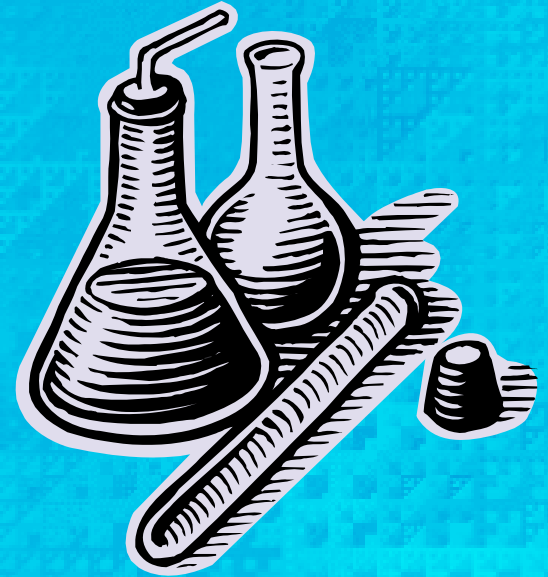
Pre and Post Monitoring

-before and after practice installation

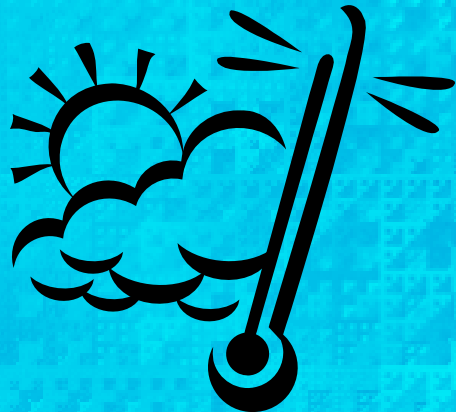
Annual Monitoring - minimum

Chemical Parameters

Dissolved oxygen
pH
Conductivity
Alkalinity
Nutrients – nitrates/
phosphates/ammonia



Physical Parameters



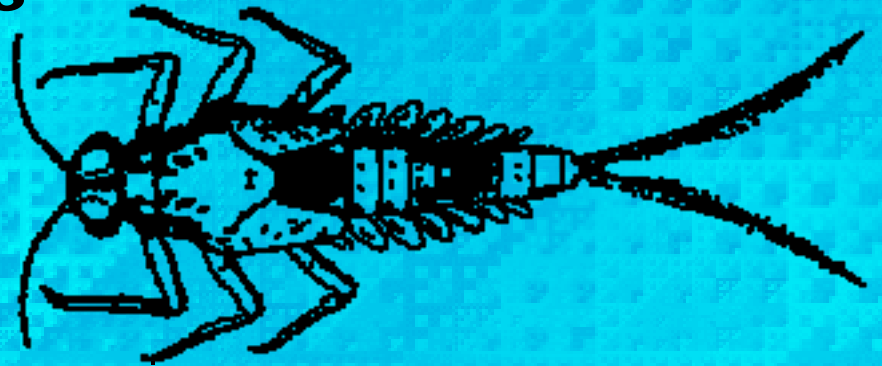
Temperature
Turbidity/TSS
Stream Flow

Biological Parameters

Benthic
Macroinvertebrates
(order/family)

Fish (Adams Co site
with PFBC)

Bacteria: fecal coliforms,
E. coli (lab analysis)



Habitat Characteristics

Riparian vegetative zone

Bank stability

Instream cover

**EPA's RBP
for Habitat
Assessment**

Substrate (embeddedness, sediment deposition)

















What the Future Holds

**Fine tuning NSCD
monitoring and CREP
monitoring**

Data Interpretation

**Continue liaison with
DEP Regions/ DEP
programs and
volunteers**

**Work with EPA/DEP
319 Program (interim
monitoring/delisting)**



